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Fact Sheet

Sample Letter to Parents of Children Exposed to Giardiasis

Record of Investigation of Enteric Infection (CD-2C) rev. 6/02

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Giardiasis

Overview^(1,2)

For a more complete description of giardiasis, refer to the following texts:

- Control of Communicable Diseases Manual (CCDM).
- Red Book, Report of the Committee on Infectious Diseases.

Case Definition⁽³⁾

Clinical description

An illness caused by the protozoan *Giardia lamblia* and characterized by diarrhea, abdominal cramps, bloating, weight loss, or malabsorption. Infected persons may be asymptomatic.

Laboratory criteria for diagnosis

- Demonstration of *G. lamblia* cysts in stool, or
- Demonstration of *G. lamblia* trophozoites in stool, duodenal fluid, or small-bowel biopsy, or
- Demonstration of *G. lamblia* antigen in stool by a specific immunodiagnostic test (e.g., enzyme-linked immunosorbent assay)

Case classification

Confirmed: a case that is laboratory confirmed

Probable: a clinically compatible case that is epidemiologically linked to a confirmed case

Information Needed for Investigation

Verify the diagnosis. What laboratory tests were conducted and what were the results?

When investigating gastrointestinal illness of unknown etiology, see the Outbreaks of Acute Gastroenteritis Section.


Establish the extent of illness. Determine if household or other close contacts are, or have been ill, by contacting the health care provider, patient or family member.

Contact the Regional Communicable Disease Coordinator if an outbreak is suspected, or if cases are in high-risk settings or jobs such as food handlers, child care, or health care.

Contact the Bureau of Child Care if the case is associated with a child care center.

Case/Contact Follow Up And Control Measures

Determine the source of infection to prevent other cases:

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- Does the case or a member of the case's household attend a child care center or nursery school?
- Has the case ingested untreated water from a lake or stream?
- Has the case traveled out of the country to an endemic area?
- Does the case have contact with excreta from wild or domestic animals?
- Have there been other cases linked by time, place or person?
- Does the case engage in sexual practices that might place them or others at increased risk?

Control Measures

See the Giardiasis section of the Control of Communicable Diseases Manual (CCDM), “Control of patient, contacts and the immediate environment”.


See the Giardiasis section of the Red Book.

General:

Identify symptomatic contacts and obtain stool specimens. If the first stool specimen is negative by microscopic examination for ova and parasites (O&P), examine two additional specimens collected 24 hours apart.⁽⁴⁾ If the initial specimen is negative by EIA antigen testing of the stool, no additional specimens are needed for testing of *Giardia lamblia*.⁽⁵⁾ Positive contacts should be interviewed and referred for medical assessment.

- High-risk settings or jobs.

Food handlers, child care providers, and health care providers should be treated, excluded until diarrhea ceases and may return to work when approved to by either the local health department or the Missouri Department of Health and Senior Services. Counsel person upon returning to work regarding good hand washing. Treatment of symptomatic person(s) with appropriate antibiotic medication relieves symptoms and usually makes the person non-infectious.
- Outbreaks
 1. Food handlers and health care workers associated with an outbreak should be treated and may return to work when 3 successive fecal samples are negative for *Giardia lamblia*. Specimens should be collected at least 24 hours apart, but no sooner than 2 weeks after completion of treatment.⁽⁶⁾
 2. Child care workers should be treated, excluded until diarrhea ceases and may return to work when approved to by either the local health department or the Missouri Department of Health and Senior Services.
- Upon identification of an acute case in child care, the facility should be provided with the “Sample Letter To Parents Of Children Exposed to Giardiasis” for notification.

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- All rules and guidelines regarding hand washing, toileting, diapering, and food handling, referenced in Licensing Rules for Group Day Care Homes and Child Day Care Centers ⁽⁷⁾ should be followed rigorously.
- Contact the Bureau of Child Care for the Environmental Public Health Specialist to perform an assessment of the child care facility.
- If cases are associated with a public water supply, notify the Regional Communicable Disease Coordinator, who will notify the Department of Natural Resources (DNR). If possible, DNR should be contacted before the collection of any public water samples.
- If coliform bacteria are detected in a private water supply (e.g. cistern, well), advise the family to boil the water (bring water to a full rolling boil for one minute) used for drinking, food preparation, dishwashing, and tooth brushing until the problem in the water supply can be corrected.
- If fresh fruits or vegetables are suspected as the vehicle in an outbreak, trace back of the product may prevent additional cases.

Laboratory Procedures

Specimens:

Microscopic Examination for Ova and Parasites:


1. Use an ova and parasite (O&P) kit, which contains two different preservatives, polyvinyl alcohol (PVA) and formalin to collect specimens. Specimens must be placed in both preservatives. Specimens may be shipped at room temperature. The Missouri State Public Health Laboratory (SPHL) performs this test. Specifically request testing for *Giardia lamblia* on the specimen submission form. Initial specimens should also be screened for *Cryptosporidium parvum*. The same specimen can be used for both tests.
2. If a large number of samples will be submitted (+15), or if sampling will continue over a long period, contact the Regional Communicable Disease Coordinator so arrangements may be made with the laboratory.

EIA Antigen Testing:

The SPHL does not routinely perform EIA testing of stool specimens for *Giardia lamblia*. However, many commercial laboratories do. Generally, the specimens can be fresh unpreserved stool, rectal swabs in culturettes or stool collected in formalin. Consult with the testing laboratory before specimen collection.

Enteric Cultures:

When investigating diarrheal illness of unknown etiology specimens should be initially screened for *Salmonella*, *Shigella*, *Campylobacter* and *E. coli O157:H7*. Collect specimens in Cary Blair media using the enteric specimen collection kit supplied by the SPHL. Specimens should be shipped refrigerated.

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Environmental Samples:

Water supplies will not be tested for *Giardia lamblia* without substantial and convincing epidemiological evidence. If the water supply is suspected as the source of infection, it can be screened for coliform bacteria, which is a general indicator of the safety of the water.


Reporting Requirements

Giardiasis is a Category II disease and shall be reported to the local health authority or to the Missouri Department of Health and Senior Services (DHSS) within 3 days of suspected diagnosis.

1. For confirmed and probable cases, complete a "Disease Case Report" (CD-1), and a "Record of Investigation of Enteric Infection" (CD-2C) revised 6/02.
2. Entry of the completed CD-1 into the MOHSIS database negates the need for the paper CD-1 to be forwarded to the Regional Health Office.
3. Send the completed secondary investigation form(s) to the Regional Health Office.
4. All outbreaks or "suspected" outbreaks must be reported as soon as possible (by phone, fax or e-mail) to the Regional Communicable Disease Coordinator. This can be accomplished by completing the Missouri Outbreak Surveillance Report (CD-51).
5. Within 90 days from the conclusion of an outbreak, submit the final outbreak report to the Regional Communicable Disease Coordinator.

References

1. Chin, James, ed. "Giardiasis (*Giardia* enteritis)." Control of Communicable Diseases Manual, 17th ed. Washington, DC: American Public Health Association, 2000: 220-222.
2. American Academy of Pediatrics. "*Giardia lamblia* Infections (Giardiasis)." In: Pickering, LK, ed. 2000 Red Book: Report of the Committee on Infectious Diseases. 25th ed. Elk Grove Village, IL. 2000: 252-253.
3. Centers for Disease Control and Prevention. Case Definitions for Infectious Conditions Under Public Health Surveillance. MMWR 1997;46 (No. RR-10): 48.
4. Evaluation of nine immunoassay kits (enzyme immunoassay and direct fluorescence) for detection of *Giardia lamblia* and *Cryptosporidium parvum* in human fecal specimens: Garcia LS; Shimizu RY; J Clin Microbiol. 1997 Jun; 35(6):1526-9.
5. NCCLS Document M28-P, 1993: Procedures for the recovery and identification of parasites from the intestinal tract; proposed guidelines. National Committee for Clinical Lab. Standards, Villanova, PA.
6. American Society for Microbiology. Diagnostic Medical Parasitology 3rd ed. Washington, DC. 1997: 570.
7. Missouri Department of Health and Senior Services. 19 CSR 30-62-Health. Chapter 62-Licensing Rules for Group Day Care Homes and Child Day Care Centers.

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Other Sources of Information

1. Hill, David R. “*Giardia lamblia*.” Principles and Practice of Infectious Diseases. 5th ed. Eds. Gerald L. Mandell, John E. Bennett, and Raphael Dolin. New York: Churchill Livingstone, 2000: 2888-2894.
2. Donowitz, Infection Control in the Child Care Center and Preschool, 4th Edition, 1999: pages 140-144.

Giardiasis

FACT SHEET

What is giardiasis?

Giardiasis is an intestinal illness caused by a microscopic parasite called *Giardia lamblia*. It is a common cause of diarrheal illness and over 700 cases are reported in Missouri each year. Cases may occur sporadically or in clusters or outbreaks.

Who gets giardiasis?

Anyone can get giardiasis but it tends to occur more often in people in institutional settings, children in child care centers, foreign travelers, and individuals who drink improperly treated surface water. Homosexual males may also be at increased risk of getting giardiasis.

How is this parasite spread?

The *giardia* parasite is passed in the stool of an infected person or animal and may contaminate water or food. The parasite is also spread by hand-to-mouth transfer from contaminated body surfaces or objects such as toys or diapering areas. Person to person spread may also occur in child care centers where there is close contact between preschool children who have not yet learned good bathroom and handwashing habits.

What are the symptoms of giardiasis?

Most people with giardiasis will not have any symptoms. Others may have mild to severe diarrhea, cramps, bloating, and gas. Occasionally, some will have diarrhea which lasts for several weeks or months, with weight loss.

How soon do symptoms appear?

The symptoms may appear from five to 25 days after exposure but usually within 10 days.

How long can an infected person carry *giardia*?

The carrier stage generally lasts from a few weeks to a few months. Treatment with specific medication may shorten the carrier stage.

Where are the *giardia* parasites found?

Giardia has been found in infected people (with or without symptoms) and wild and domestic animals. The beaver has gained attention as a possible source of *giardia*.

contamination of lakes, reservoirs and streams, but human fecal wastes are probably just as important.

Should an infected person be excluded from work or school?

People with diarrhea need to be excluded from child care, food service or any other group activity where they may present a risk to others. Most infected people may return to work or school when their diarrhea stops if they carefully wash their hands after using the bathroom.

What is the treatment for giardiasis?


Medications such as quinacrine, metronidazole or furazolidone are often prescribed by doctors to treat giardiasis. However, some individuals may recover on their own without medication.

What can a person or community do to prevent the spread of giardiasis?

Three important preventive measures are:

- Carefully wash hands thoroughly after toilet visits or changing diapers and before preparing or eating foods.
- Carefully dispose of sewage wastes so as not to contaminate surface or groundwater.
- Avoid consuming improperly treated drinking water.

**Missouri Department of Health and Senior Services
Section for Communicable Disease Prevention
Phone: (866) 628-9891 or (573) 751-6113**

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Sample Letter to Parents of Children Exposed to Giardiasis

DATE

To Parents of Children at

Child Care Center

Dear Parent:

A child who attends the _____ child care center has been diagnosed with giardiasis, a disease caused by the intestinal parasite *Giardia lamblia*. The symptoms of giardiasis include gas, abdominal cramping, nausea and diarrhea. *Giardia lamblia* is spread through contact with the stool of infected persons.

If your child or any member of your household has these symptoms or develops these symptoms he/she should be tested for giardiasis by submitting a stool specimen for examination. This can be done through your local health department. [Stool specimen kits may be picked up and returned to the child care center. We will make arrangements for them to be delivered to the health department.] If you or your child tests positive for giardiasis, your physician may want to prescribe medication. Please do not send your child to the center if he/she has diarrhea.

An information sheet on giardiasis is enclosed. If you have questions please contact your physician or the _____ County Health Department at [phone number].

Sincerely,



MISSOURI DEPARTMENT OF HEALTH AND SENIOR SERVICES
SECTION OF COMMUNICABLE DISEASE CONTROL AND VETERINARY PUBLIC HEALTH
RECORD OF INVESTIGATION OF ENTERIC ILLNESS

MOHSIS CID#

Information with shaded titles is not required if entered on the CD-1 report or entered into MOHSIS.

NAME: (LAST, FIRST, MI)		DATE OF BIRTH:	AGE:	GENDER:	RACE:
		/ /			
PARENT(S) NAME IF NOT ADULT:		PHONE NO.:			
HOME ADDRESS:	CITY:	STATE:	ZIP CODE:	COUNTY:	

EMPLOYMENT / CHILD CARE (*See reverse side for High-Risk Employment information.)

PLACE OF EMPLOYMENT:	ADDRESS:	PHONE NO.:	
OCCUPATION:	JOB DUTIES:		
SCHOOL / CHILD CARE ATTENDED:	GRADE OR ROOM:		
SCHOOL / CHILD CARE ADDRESS:	CITY:	STATE:	ZIP CODE:

Symptoms:* (Check Yes or No and number the order in which symptoms first presented)

ORDER NO.	SYMPTOM	YES	NO	ORDER NO.	SYMPTOM	YES	NO	ORDER NO.	SYMPTOM	YES	NO
	Nausea	<input type="checkbox"/>	<input type="checkbox"/>		Bloody Diarrhea	<input type="checkbox"/>	<input type="checkbox"/>		Malaise	<input type="checkbox"/>	<input type="checkbox"/>
	Vomiting	<input type="checkbox"/>	<input type="checkbox"/>		Cramps	<input type="checkbox"/>	<input type="checkbox"/>		Headache	<input type="checkbox"/>	<input type="checkbox"/>
	Diarrhea	<input type="checkbox"/>	<input type="checkbox"/>		Chills	<input type="checkbox"/>	<input type="checkbox"/>		Dizziness	<input type="checkbox"/>	<input type="checkbox"/>
	Watery Diarrhea	<input type="checkbox"/>	<input type="checkbox"/>		Fever _____ °	<input type="checkbox"/>	<input type="checkbox"/>		Other		

Disease

DIAGNOSIS:	ONSET DATE / TIME:*	DURATION OF SYMPTOMS:	
	/ / _____ am <input type="checkbox"/> pm <input type="checkbox"/>	_____ hrs.	
INCUBATION PERIOD:*	PHYSICIAN CONSULTED?	DATE:	HOSPITALIZED?
	<input type="checkbox"/> Yes <input type="checkbox"/> No	/ /	<input type="checkbox"/> Yes <input type="checkbox"/> No
PROVIDER NAME:	CITY:	STATE:	PHONE NO.:
TREATMENT: (TYPE, AMOUNT)			DATE:*
			/ /
<input type="checkbox"/> Recovered <input type="checkbox"/> Died	DATE OF DEATH:	CAUSE OF DEATH:	
	/ /		

Patient History (Limit patient responses to within one disease incubation period.)


TRAVEL: (OUTSIDE OF HOME COMMUNITY)	DATE(S):*	LOCATION(S):
<input type="checkbox"/> Yes <input type="checkbox"/> No		
HOME WATER SUPPLY:		
<input type="checkbox"/> Private (type) _____ <input type="checkbox"/> Bottled Water (brand) _____		
<input type="checkbox"/> Public Water District (Name) _____ Other water sources: _____		
HOME SEWAGE DISPOSAL SYSTEM:		
<input type="checkbox"/> Private (type) _____ <input type="checkbox"/> Community System (Name) _____		
RECREATIONAL WATER CONTACT: (SWIMMING POOL, LAKE, RIVER, ETC.)		
<input type="checkbox"/> Yes <input type="checkbox"/> No Type: _____ Location: _____		
Dates: _____		
PET / ANIMAL EXPOSURE: (DOMESTIC PETS, LIVESTOCK, OTHER)		
<input type="checkbox"/> Yes <input type="checkbox"/> No Pets/Animals ill: <input type="checkbox"/> Yes <input type="checkbox"/> No Animal Type(s): _____		
Date(s)* of Animal Exposure: _____		
Describe Animal Exposure: _____		
Location of Animal Exposure: _____		
Comments: _____		

Food**

	NAME	STREET ADDRESS	CITY / STATE
Grocery stores routinely used:	_____	_____	_____
	_____	_____	_____
Restaurants routinely used:	_____	_____	_____
	_____	_____	_____
OTHER FOOD SOURCES: (e.g., ETHNIC, UNPASTEURIZED, HOME CANNED)		TYPE / LOCATION:	

* Epi Calendar (reverse side) may be used to help determine time periods.
** Attach separate 3-day food history if multiple cases are known/suspected.

Please submit this form along with completed CD-1 Report on all enteric cases.

Laboratory Tests*: Record Diagnostic Information in Section 41 of CD-1 Report and/or attach copy of lab slip(s)										
Are there other associated cases? <input type="checkbox"/> Yes <input type="checkbox"/> No					If yes, how many?		How Associated:			
List ill contacts:										
NAME & ADDRESS	DOB / AGE	SEX	RELATION TO PATIENT	SIMILAR ILLNESS		ONSET DATE	LAB CONFIRMED		CD-1 AND ENTERIC FORM COMPLETED	
				YES	NO		YES	NO	YES	NO
				<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High Risk Employment Information (e.g., Food Handler, Child Care or Health Care Worker)										
SPECIFIC JOB DUTIES:*										
DATE(S) WORKED PRIOR TO ONSET OF ILLNESS:*						EXCLUDED FROM WORK? <input type="checkbox"/> Yes <input type="checkbox"/> No		DATE:*/ / /		
IF YES, BY WHOM:					TITLE:					
FOLLOW-UP SPECIMEN(S) REQUIRED? <input type="checkbox"/> Yes <input type="checkbox"/> No		DATE COLLECTED:*/ / /		RESULTS:*/ 1. _____ 2. _____ 3. _____						
LAB:			WERE CONTROL MEASURES DISCUSSED WITH PATIENT? <input type="checkbox"/> Yes <input type="checkbox"/> No				BY:			
RETURNED TO WORK? <input type="checkbox"/> Yes <input type="checkbox"/> No		DATE:*/ / /		EXPECTED DATE:*/ / /			EXCLUDED FROM HIGH-RISK DUTIES? <input type="checkbox"/> Yes <input type="checkbox"/> No			
SEXUAL PREFERENCE: <input type="checkbox"/> Heterosexual <input type="checkbox"/> Homosexual <input type="checkbox"/> Bisexual <input type="checkbox"/> Unknown <input type="checkbox"/> N/A									MULTIPLE PARTNERS? <input type="checkbox"/> Yes <input type="checkbox"/> No	
RECREATIONAL DRUG USE: <input type="checkbox"/> Yes <input type="checkbox"/> No		DRUGS OF CHOICE:								
*Epi Calendar:										
MONTH(S) / DATES:			YEAR:		DISEASE:			WORK:		
Sunday ____	Monday ____	Tuesday ____	Wednesday ____	Thursday ____	Friday ____	Saturday ____				
Sunday ____	Monday ____	Tuesday ____	Wednesday ____	Thursday ____	Friday ____	Saturday ____				
Sunday ____	Monday ____	Tuesday ____	Wednesday ____	Thursday ____	Friday ____	Saturday ____				
OTHER PERTINENT EPIDEMIOLOGICAL DATA (TO INCLUDE PROBABLE SOURCE):										
INVESTIGATOR: 								DATE COMPLETED:		